What is claimed is:

1. An optical fiber component for changing spot seizes of optical fibers with different core diameters, the optical fiber component for spot size transition having arranged therein:

a large-diameter core optical fiber having a light incident and outgoing end face;

a spliced portion in which the large-diameter core optical fiber and a small-diameter core optical fiber are fusion-spliced;

a spot size transition portion in which a core diameter of the small-diameter core optical fiber is expanded in the vicinity of the spliced portion; and

the small-diameter core optical fiber.

2. An optical fiber component for spot size transition according to claim 1,

wherein a refractive index profile in the spot size transition portion continuously changes in the longitudinal direction of the optical fiber, and the spot sizes of the large-diameter core optical fiber and the small-diameter core optical fiber match in the spliced portion.

3. An optical fiber component for spot size transition according to claim 1 or 2,

wherein a relative refractive index difference in the

spliced portion of the spot size transition portion is substantially identical with a relative refractive index difference of the large-diameter core optical fiber.

4. An optical fiber component for spot size transition according to any one of claims 1 to 3,

wherein the optical fiber component has the large-diameter core optical fiber, the spliced portion, the spot size transition portion, and the small-diameter core optical fiber co-arranged inside a ferrule.

5. A method of making an optical fiber component for changing spot sizes of optical fibers with different core diameters, the method of making an optical fiber component for spot size transition comprising:

fusion-splicing a large-diameter core optical fiber and a small-diameter core optical fiber to form a spliced portion, heating the vicinity of the spliced portion and thermally diffusing a dopant contained in the small-diameter core optical fiber to thereby expand the core diameter for forming a spot size transition portion, and then cutting an arbitrary position of the large-diameter core optical fiber to set the cut face as a light incident and outgoing end face, and arranging the large-diameter core optical fiber, the spliced portion, the spot size transition portion, and the small-diameter core optical fiber inside the optical fiber component.

6. A method of making an optical fiber component for

spot size transition according to claim 5,

wherein, in the case in which the dopant is heated and thermally diffused to expand the core diameter of the small-diameter core optical fiber and form the spot size transition portion, a refractive index profile in the spot size transition portion is continuously changed in the longitudinal direction of the optical fiber, and the vicinity of the spliced portion is heated until spot sizes of the large-diameter core optical fiber and the small-diameter core optical fiber match in the spliced portion.

7. A method of making an optical fiber component for spot size transition according to claim 5 or 6,

wherein, in the case in which the dopant is heated and thermally diffused to expand the core diameter of the small-diameter core optical fiber and form the spot size transition portion, heating is performed until a relative refractive index difference of the spot size transition portion becomes substantially identical with a relative refractive index difference of the large-diameter core optical fiber in the spliced portion.

8. A method of making an optical fiber component for spot size transition according to any one of claims 5 to 7,

wherein, in the case in which the dopant is thermally diffused to expand the core diameter of the small-diameter core optical fiber and form the spot size transition portion, heating

is performed while a transition loss of the spliced portion is monitored.